Pharmacy Technician

Study Guide

Assessment:
8616 Pharmacy Technician

Aligned with the Pharmacy Technician Certification Board and the National Pharmacy Technician Association

career tech Testing
The Provider of Online Testing Solutions

OKLAHOMA WORKS

Overview

This study guide is designed to help students prepare for the Pharmacy Technician assessment. It not only includes information about the assessment, but also the skills standards upon which the assessment is based and test taking strategies.

Each of the four sections in this guide provides useful information for students preparing for the Pharmacy Technician assessment.

- CareerTech and Competency-Based Education: A Winning Combination
- Pharmacy Technician assessment
  - Assessment Information
  - Abbreviations and acronyms used in the study guide and assessment
  - Standards and Test Content
  - Sample Questions
- Strategies for Test Taking Success
- Notes

This assessment is aligned with the Pharmacy Technician Certification Board (PTCB) and the National Pharmacy Technician Association (NPTA).

For more information on the PTCB, please go to **www.ptcb.org**.

Information about the NPTA can be found at **www.pharmacytechnician.org**.

CareerTech and Competency-Based Education: A Winning Combination

Competency-based education uses learning outcomes that emphasize both the application and creation of knowledge and the mastery of skills critical for success. In a competency-based education system, students advance upon mastery of competencies, which are measurable, transferable outcomes that empower students.

Career and technology education uses industry professionals and certification standards to identify the knowledge and skills needed to master an occupation. This input provides the foundation for development of curriculum, assessments and other instructional materials needed to prepare students for wealth-generating occupations and produce comprehensively trained, highly skilled employees demanded by the work force.

Tools for Success

CareerTech education relies on three basic instructional components to deliver competency-based instruction: skills standards, curriculum materials, and competency assessments.

Skills standards provide the foundation for competency-based instruction and outline the knowledge and skills that must be mastered in order to perform related jobs within an industry. Skills standards are aligned with national skills standards and/or industry certification requirements; therefore, a student trained to the skills standards is equally employable in local, state and national job markets.

Curriculum materials and textbooks contain information and activities that teach students the knowledge and skills outlined in the skills standards. In addition to complementing classroom instruction, curriculum resources include supplemental activities that enhance learning by providing opportunities to apply knowledge and demonstrate skills.

Competency Assessments test the student over material outlined in the skills standards and taught using the curriculum materials and textbooks. When used with classroom performance evaluations, written competency assessments provide a means of measuring occupational readiness.

Each of these components satisfies a unique purpose in competency-based education and reinforces the knowledge and skills students need to gain employment and succeed on the job.

Measuring Success

Evaluation is an important component of competency-based education. Pre-training assessments measure the student's existing knowledge prior to receiving instruction and ensure the student's training builds upon this knowledge base. Formative assessments administered throughout the training process provide a means of continuously monitoring the student's progress towards mastery.

Written competency assessments provide a means of evaluating the student's mastery of knowledge and skills. Coaching reports communicate competency assessment scores to students and provide a breakdown of assessment results by standard area. The coaching report also shows how well the student has mastered skills needed to perform major job functions and identifies areas of job responsibility that may require additional instruction and/or training.

Pharmacy Technician Assessment Information

What is the Pharmacy Technician assessment?

The Pharmacy Technician assessment is an end-of-program assessment for students who have completed a Pharmacy Technician program. The assessment provides an indication of student mastery of knowledge and skills needed to succeed as a pharmacy technician.

How was the assessment developed?

The assessment was developed by the CareerTech Testing Center. Items were developed and reviewed by a committee of subject matter experts.

What does the assessment cover?

The assessment is aligned to the PTCB and the NPTA. Specifically, the test includes 80 multiple-choice test items.

Pharmacology for Technicians	14%	Medication Order Entry and Fill Process	18%
Pharmacy Law and Regulations	15%	Pharmacy Inventory Management	9%
Sterile and Non-Sterile Compounding	9%	Pharmacy Billing and Reimbursement	9%
Medication Safety	14%	Pharmacy Information System Usage and Application	9%
Pharmacy Quality Assurance	8%		

What are the benefits of using the assessment?

Students receive a competency certificate for each assessment that he/she passes. This certificate may be included in his/her portfolio and used to communicate the student's mastery of the subject matter to potential employers.

When should the assessment be taken?

The CareerTech Testing Center recommends that students take this assessment as soon as possible after receiving all standards-related instruction, rather than waiting until the end of the school year.

Is the assessment timed?

No. Although students may take as long as they need, most finish the assessment within one hour.

What resources can students use on the assessment?

Students are allowed to use calculators and scratch paper on CTTC competency assessments; however, these items must be provided by the testing proctor and returned to the proctor before the student's exam is submitted for scoring. Calculator apps on cell phones and other devices may not be used on these assessments.

What accommodations can be made for students with Individualized Education Plans (IEPs)?

Accommodations are allowed for students with an Individualized Education Plan. Examples of allowable accommodations include:

- Extended time — This assessment is not timed; therefore, students may take as much time as needed to finish. The assessment must be completed in one testing session.
- Readers — A reader may be used to read the assessment to a student who has been identified as needing this accommodation.
- Enlarged text — Students needing this accommodation can activate this feature by clicking the AA icon in the upper right corner of the screen.

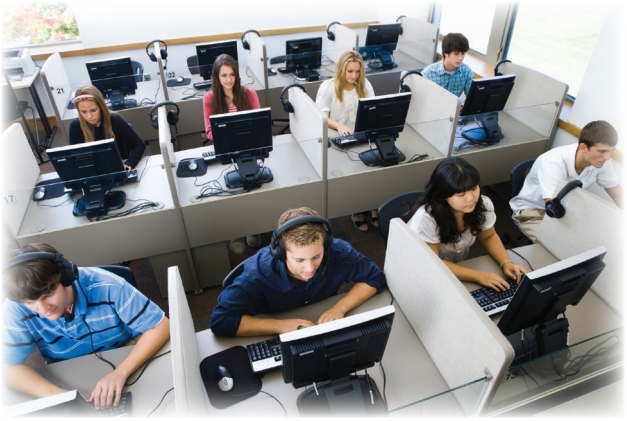
What can students expect on Test Day?

All CTTC assessments are web-based and delivered exclusively by a proctor in the school's assessment center. The proctor **cannot** be an instructor or anyone who was involved with the student during instruction.

Assessments are delivered in a question-by-question format. When a question is presented, the student can select a response or leave the question unanswered and advance to the next question. Students may also flag questions to revisit before the test is scored. All questions must be answered before the test can be submitted for scoring.

Can students retake the test?

Students may retake the test unless their school or state testing policies prohibit retesting. Students who can retest must wait at least three days between test attempts.



Standards and Test Content

Duty 1. Pharmacology for Technicians (11 questions)

1. Generic and brand names of pharmaceuticals.
2. Therapeutic equivalence.
3. Drug interactions (e.g., drug-disease, drug-drug, drug-dietary supplement, drug-OTC, drug-laboratory, drug-nutrient).
4. Strengths/dose, dosage forms, physical appearance, routes of administration, and duration of drug therapy.
5. Common and severe side or adverse effects, allergies, and therapeutic contraindications associated with medications.
6. Dosage and indication of legend, OTC medications, herbal and dietary supplements.

Duty 2. Pharmacy Law and Regulations (10 questions)

1. Storage, handling and disposal of hazardous substances and wastes (e.g., MSDS).
2. Hazardous substances exposure, prevention and treatment (e.g., eyewash, spill kit, MSDS).
3. Controlled substance transfer regulations (DEA).
4. Controlled substance documentation requirements for receiving, ordering, returning, loss/theft, destruction (DEA).
5. Formula to verify the validity of a prescriber's DEA number (DEA).
6. Record keeping, documentation, and record retention (e.g., length of time prescriptions are maintained on file).
7. Restricted drug programs and related prescription-processing requirements (e.g., thalidomide, isotretinoin, clozapine).
8. Professional standards related to data integrity, security, and confidentiality (e.g., HIPAA, backing up and archiving).
9. Requirement for consultation (e.g., OBRA '90).
10. FDA's recall classification.
11. Infection control standards (e.g., laminar air flow, clean room, hand washing, cleaning counting trays, countertop, and equipment) (OSHA, USP 795 and 797).
12. Record keeping for repackaged and recalled products and supplies (TJC, BOP).
13. Professional standards regarding the roles and responsibilities of pharmacists, pharmacy technicians, and other pharmacy employees (TJC, BOP).
14. Reconciliation between state and federal laws and regulations.
15. Facility, equipment, and supply requirements (e.g., space requirements, prescription file storage, cleanliness, reference materials) (TJC, USP, BOP).

Duty 3. Sterile and Non-Sterile Compounding (7 questions)

1. Infection control (e.g., hand washing, PPE).
2. Handling and disposal requirements (e.g., receptacles, waste streams).
3. Documentation (e.g., batch preparation, compounding record).
4. Determine product stability (e.g., beyond use dating, signs of incompatibility).
5. Selection and use of equipment and supplies.
6. Sterile compounding processes.
7. Non-sterile compounding processes.

Duty 4. Medication Safety (11 questions)

1. Error prevention strategies for data entry (e.g., prescription or medication order to correct patient).
2. Patient package insert and medication guide requirements (e.g., special directions and precautions).
3. Identify issues that require pharmacist intervention (e.g., DUR, ADE, OTC recommendation, therapeutic substitution, misuse, missed dose).
4. Look-alike/sound-alike medications.
5. High-alert/risk medications.
6. Common safety strategies (e.g., tall man lettering, separating inventory, leading and trailing zeros, limit use of error prone abbreviations).

Duty 5. Pharmacy Quality Assurance (6 questions)

1. Quality assurance practices for medication and inventory control systems (e.g., matching National Drug Code (NDC) number, bar code, data entry).
2. Infection control procedures and documentation (e.g., PPE, needle recapping).
3. Risk management guidelines and regulations (e.g., error prevention strategies).
4. Communication channels necessary to ensure appropriate follow-up and problem resolution (e.g., product recalls, shortages).
5. Productivity, efficiency, and customer satisfaction measures.
6. Common safety strategies (e.g., tall man lettering, separating inventory, leading and trailing zeros, limit use of error prone abbreviations).

Duty 6. Medication Order Entry and Fill Process (14 questions)

1. Order entry process.
2. Intake, interpretation, and data entry.
3. Calculate doses required.
4. Fill process (e.g., select appropriate product, apply special handling requirements, measure, and prepare product for final check).
5. Labeling requirements (e.g., auxiliary and warning labels, expiration date, patient specific information).
6. Packaging requirements (e.g., type of bags, syringes, glass, pvc, child resistant, light resistant).
7. Dispensing process (e.g., validation, documentation and distribution).

Duty 7. Pharmacy Inventory Management (7 questions)

1. Function and application of NDC, lot numbers and expiration dates.
2. Formulary or approved/preferred product list.
3. Ordering and receiving processes (e.g., maintain par levels, rotate stock).
4. Storage requirements (e.g., refrigeration, freezer, warmer).
5. Removal (e.g., recalls, returns, outdates, reverse distribution).

Duty 8. Pharmacy Billing and Reimbursement (7 questions)

1. Reimbursement policies and plans (e.g., HMOs, PPO, CMS, private plans).
2. Third party resolution (e.g., prior authorization, rejected claims, plan limitations).
3. Third-party reimbursement systems (e.g., PBM, medication assistance programs, coupons, and self-pay).
4. Healthcare reimbursement systems (e.g., home health, long-term care, home infusion).
5. Coordination of benefits.

Duty 9. Pharmacy Information System Usage and Application (7 questions)

1. Pharmacy-related computer applications for documenting the dispensing of prescriptions.
2. Databases, pharmacy computer applications, and documentation management (e.g., user access, drug database, interface, inventory report, usage reports, override reports, diversion reports).

Sample Questions

_____ 1. On a written prescription, what does NKDA stand for?

a. no known drug allergy
b. no health insurance
c. no current prescriptions
d. no over the counter prescriptions

_____ 2. A prescription is filled for eye drops with the directions 2gtt od tid. How many drops will a patient use a day?

a. 4
b. 6
c. 8
d. 12

_____ 3. A prescription is written for Lipitor 10mg 1 po qd with 11 refills. The pharmacy has a 15% mark-up plus a $4.50 dispensing fee. The cost for a 90-count bottle is $233.15. How much is a 30-day supply?

a. $82.22
b. $93.87
c. $94.55
d. $95.16

_____ 4. A compound is prescribed containing nystatin and hydrocortisone with a 2:1 ratio. If the pharmacy technician fills a prescription for 3 oz, how much nystatin is needed?

a. 15g
b. 30g
c. 45g
d. 60g

_____ 5. If federal law requires pharmacy records to be kept for two years and state law requires pharmacy records to be kept for five years. How long should the Oklahoma pharmacies retain pharmacy records?

a. two years - federal law supersedes state law
b. two years - the less stringent law applies to record retention
c. five years - state law supersedes federal law
d. five years - the more stringent law applies to records retention

_____ 6. A prescription is written for Boniva 150mg 1tab po qhs monthly for one year. Why should the pharmacy technician question this prescription?

a. it does not come in the strength indicated
b. it should be taken in the morning
c. the prescription is only good for a 6-month supply
d. nothing is wrong the prescription should be filled as written

_____ 7. How many kilograms equal 60 lbs?

a. 17.17
b. 23
c. 26
d. 27.27

_____ 8. A common side effect of narcotics is:

a. constipation.
b. diarrhea.
c. increased respirations.
d. insomnia.

_____ 9. MSO4 is the abbreviation for:

a. morphine sulfate.
b. magnesium sulfate.
c. magnesium sulfite.
d. morphine sulfite.

_____ 10. When washing hands, the pharmacy technician must:

a. apply hand sanitizer.
b. scrub vigorously with foaming soap.
c. use an approved anti-microbial cleanser.
d. use hot water.

Sample Questions — Key

1. On a written prescription, what does NKDA stand for?

   a. no known drug allergy — Correct
   b. no health insurance — Incorrect
   c. no current prescriptions — Incorrect
   d. no over the counter prescriptions — Incorrect

2. A prescription is filled for eye drops with the directions 2gtt od tid. How many drops will a patient use a day?

   a. 4 — Incorrect
   b. 6 — Correct
   c. 8 — Incorrect
   d. 12 — Incorrect

3. A prescription is written for Lipitor 10mg 1 po qd with 11 refills. The pharmacy has a 15% mark-up plus a $4.50 dispensing fee. The cost for a 90-count bottle is $233.15. How much is a 30-day supply?

   a. $82.22 — Incorrect
   b. $93.87 — Correct
   c. $94.55 — Incorrect
   d. $95.16 — Incorrect

4. A compound is prescribed containing nystatin and hydrocortisone with a 2:1 ratio. If the pharmacy technician fills a prescription for 3 oz, how much nystatin is needed?

   a. 15g — Incorrect
   b. 30g — Incorrect
   c. 45g — Incorrect
   d. 60g — Correct

5. If federal law requires pharmacy records to be kept for two years and state law requires pharmacy records to be kept for five years. How long should the Oklahoma pharmacies retain pharmacy records?

   a. two years - federal law supersedes state law — Incorrect
   b. two years - the less stringent law applies to record retention — Incorrect
   c. five years - state law supersedes federal law — Correct
   d. five years - the more stringent law applies to records retention — Incorrect

6. A prescription is written for Boniva 150mg 1tab po qhs monthly for one year. Why should the pharmacy technician question this prescription?

a. it does not come in the strength indicated	Incorrect
b. it should be taken in the morning	Correct
c. the prescription is only good for a 6-month supply	Incorrect
d. nothing is wrong the prescription should be filled as written	Incorrect

7. How many kilograms equal 60 lbs?

a. 17.17	Incorrect
b. 23	Incorrect
c. 26	Incorrect
d. 27.27	Correct

8. A common side effect of narcotics is:

a. constipation.	Correct
b. diarrhea.	Incorrect
c. increased respirations.	Incorrect
d. insomnia.	Incorrect

9. MSO4 is the abbreviation for:

a. morphine sulfate.	Correct
b. magnesium sulfate.	Incorrect
c. magnesium sulfite.	Incorrect
d. morphine sulfite.	Incorrect

10. When washing hands, the pharmacy technician must:

a. apply hand sanitizer.	Incorrect
b. scrub vigorously with foaming soap.	Incorrect
c. use an approved anti-microbial cleanser.	Correct
d. use hot water.	Incorrect

Abbreviations and Acronyms

The following is a list of abbreviations, symbols and acronyms used in the Pharmacy Tech study guide and on the Pharmacy Tech assessment.

Abbreviations and acronyms:

ACE	angiotensin-converting-enzyme
ADE	adverse drug event
BOP	Board of Pharmacy
CMS	center for Medicare & Medicaid services
CSA	controlled substance act
DEA	drug enforcement administration
DUR	Drug utilization review
FAA	Federal Aviation Administration
FDA	Federal Drug Administration
HIPAA	Health Insurance Portability and Accountability Act
HMO	health maintenance organization
IM	intramuscular
IRS	Internal Revenue Service
IV	intravenous
JCAHO	Joint Commission Accreditation of Healthcare Organizations
NDC	national drug code
NKDA	no known drug allergy
OBRA	The Omnibus Budget Reconciliation
OSHA	Occupational Safety and Health Administration
OTC	over the counter
PPE	personal protective equipment
PPO	preferred provider organization
PPI	patient packet insert
SDS	safety data sheets
TJC	The Joint Commission
USP	United States Pharmacopeia (compounding monograph)
USDA	United States Department of Agriculture

Medication abbreviations, symbols and acronyms:

APAP	acetaminophen
HCTZ	hydrochlorothiazide
MSO4	morphine sulfate
NS	normal saline

Measurements:

°	Degree
°F	Degree Fahrenheit
°C	Degree Celsius
"	Inch/inches
'	Foot/feet
%	Percent
C	Cup
lb.	Pound
oz.	Ounce
T	Tablespoon
t	Teaspoon
g	Gram
gr	Grain
gtts	drops per minute
kg	kilogram
L	Liter
mcg	microgram
mg	milligram
mL	milliliter
mm Hg	millimeters of Mercury
mph	miles per hour
J	Joules
LPM	Liters per minute

Doses/times:

q 8	every 8 hours
q 12	every 12 hours
q2h	every 2 hours
q4h	every 4 hours
qac	before meals
qam	every morning
qd	once a day
qhs	at bedtime
QID	four times a day
qod	every other day
TID	three times a day
prn	as needed
BID	twice a day
NPO	nothing by mouth
TPO	take by mouth

Test Taking Strategies

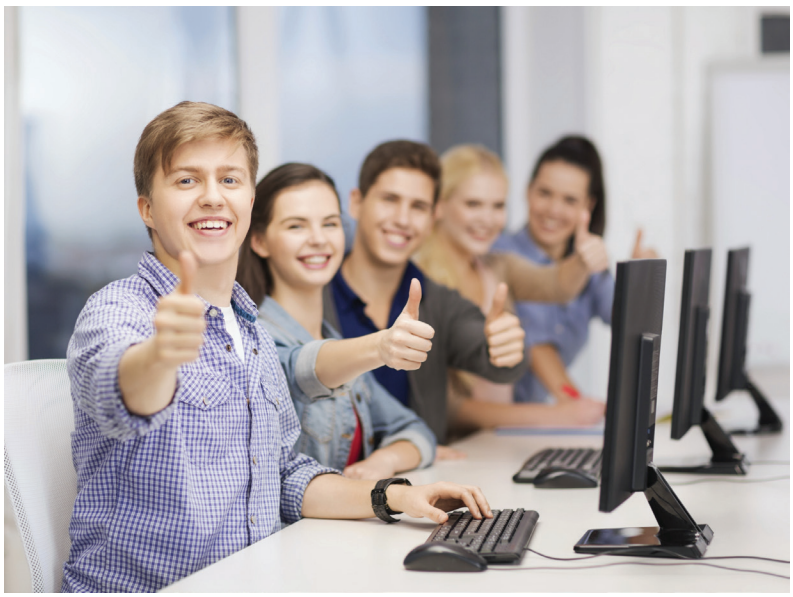
This section of the study guide contains valuable information for testing success and provides a common-sense approach for preparing for and performing well on any test.

General Testing Advice

1. Get a good night's rest the night before the test — eight hours of sleep is recommended.
2. Avoid junk food and "eat right" several days before the test.
3. Do not drink a lot or eat a large meal prior to testing.
4. Be confident in your knowledge and skills!
5. Relax and try to ignore distractions during the test.
6. Focus on the task at hand — taking the test and doing your best!
7. Listen carefully to the instructions provided by the exam proctor. If the instructions are not clear, ask for clarification.

Testing Tips

1. Read the entire question before attempting to answer it.
2. Try to answer the question before reading the choices. Then, read the choices to determine if one matches, or is similar, to your answer.
3. Do not change your answer unless you misread the question or are certain that your first answer is incorrect.
4. Answer questions you know first, so you can spend additional time on the more difficult questions.
5. Check to make sure you have answered every question before you submit the assessment for scoring — unanswered questions are marked incorrect.



NOTES